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UDC 620.193.5

MOVCHAN, B. A., KUZMIN, G. S., MOCHALOVA, T. F., KARATYSH, V. V., TIKHONOVSKIY, A. L., and YAGUPOL'SKAYA, L. N., Academy of Sciences Ukrainian SSR, Institute of Electric Welding imeni Ye. O. Paton, Perm' Polytechnical Institute

"Corrosion of Nickel of Varying Purity in Gaseous Hydrogen Fluoride"

Moscow, Zashchita Metallov, Vol 7, No 1, Jan-Feb 71, pp 32-34

Abstract: A study was made of the behavior in gaseous hydrogen fluoride of commercially pure nickel NP-2A and ultrapure nickel refined by the electron-beam method in vacuum. A specially designed apparatus was used for the experiments, consisting of two communicating nickel ovens connected with a chemical absorber. Experiments lasting up to 120 hours were carried out at 550° and an HF pressure of 20 atm. The results indicate that the corrosion resistance of the ultrapure nickel in gaseous HF is five times higher than that of nickel NP-2A. The electron-beam re-

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MOVCHAN, B. A., et al., Zashchita Metallov, Vol 7, No 1, Jan-Feb 71, pp 32-34

fined nickel snows no intercrystalline corrosion. Consequently, nickel refined by the electron-beam method is recommended for the manufacture of nickel equipment. The electron-beam refining of nickel is also economically advantageous.

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USSR UDC 621.791.756.019:546.74:669.15.194

KUZ'MIN, G. S., and DOBRYNIN, V. F., Perm Polytechnical Institute

"Special Features of Welding Nickel With Low-Carbon Stainless Steels"

Kiev, Avtomaticheskaya Svarka, No 9, Sep 70, pp 41-44

Abstract: A study was made of the effect of the chemical composition of welds on the quality and properties of joints of NP2 nickel and MSt3 steel made by automatic welding with flux. Sv-08 steel and NP2 nickel wire were used and the angle of the V-butt joint was varied from the steel or nickel side. The nickel content in the welds varied from 15 to 80%. The effect of alloying the nickel-steel welds by manganese, chromium, molybdenum, aluminum, titanium, and other metals, which were introduced by a specially developed ceramic flux, was also investigated. Welds containing 30-60% Ni had a maximum tendency toward pore formation, with the quantity of pores increasing with the oxidizing property of the flux. A table illustrating the effect of harmful impurities (sulfur, phosphorus, oxygen) at various nickel contents in a weld on transverse crack formation is presented. It is concluded that the use of welding materials with low oxygen, sulfur, and phosphorus content, and alloying by 1.8-2% Mn, 8-9% Cr, and 3-4% Mo improve the strength and mechanical properties of the nickel-steel joints.

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UDC 621.791.756:546.74:546.56

KUZ'MIN, G. S., KUZ'MIN, I. F., and DOBRYNIN, V. P., Perm Polytechnical Institute

"Temperature Fields in Welding Nickel With Copper and Stainless Steel Under Flux"

Kiev, Avtomaticheskaya Svarka, No 12, Dec 70, pp 26-28

Abstract: A study was made of the heat distribution in automatic welding of NP2 nickel with M1 copper and Kh18N10T stainless steel. The experiments described were made on plates of these three metals measuring 500 x 150 x 5 mm, which were butt-welded without preparation of the edges by the ADF-500 automatic machine. The nickel and stainless steel were welded with Sv-OKh19N9 wire under experimental ceramic flux, and the nickel and copper specimens were welded with NMZhMts 28-2.5-1.5 under fused flux type An-26. To study the heat distribution in welding the different types of plates, the thermic cycles of points at various distances from the seam axis were recorded with the use of Chromel-aluminum thermocouples and the N-700 oscilloscope. It was found that the polarity of the welding current strongly affects the heat distribution.

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UDC 621.791.856.3.019

KUZ'MIN, G. S., KARATYSH, V. V., and MOCHALOVA, T. F.

"Tendency of Nickel to Form Hot Cracks"

Kiev, Avtomaticheskaya Svarka, No 6, Jun 70, pp 71-72

Abstract: The presence of practically insoluble impurities in nickel, such as sulfur, bismuth, lead, phosphorus, and an increase in gas concentration may cause the appearance of cracks when the metal is heated in processing or is welded. Soviet industry now produces five brands of nickel with a purity of from 99.5 to 99.99%. The use of the NP2 and NP2A brands, containing no more than 0.5% impurities, is recommended for use in metal structuring. The purpose of the work described in this article, done at the Perm Polytechnical Institute, is to compare the durability of NP2A nickel and nickel refined by electron-beam remelting. A table of the chemical composition of both of these metals is given. A diagram of the specimens with which the research was made is also shown. The results show that the NP2A has the lower durability.

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1/2 028 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--EVALUATING PORE FORMATION TENDENCIES DURING THE WELDING OF NICKEL -U-

AUTHOR-(02)-KUZMIN, G.S., LAZARSON, E.V.

COUNTRY OF INFO--USSR

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DATE PUBLISHED--------70

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CIRC ACCESSION NO--AP0118949

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING ELEC. WELDING OF MI UNDER AN AR ATM., N, IF GREATER THAN 0.05PERCENT IN THE AR, CAUSES PORE FORMATION. THE DELETERIOUS EFFECT OF UP TO 0.3-0.4PERCENT N CAN BE COUNTER BALANCED BY 20PERCENT H. FACILITY: PERM. POLITEKH. INST., PERM, USSR.

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USSR

UDC 621.791.754.019:546.74

KUZ'MIN, G. S., KARATYSH, V. V., Perm' Polytechnic Institute

"Resistance of Welded Joints in Nickel to Hot Cracks"

Kiev, Avtomaticheskaya Svarka, No 11, Nov 72, pp 20-21.

Abstract: The metal of nickel seams produced using various welding wires was tested for technological strength. The hot-crack resistance of the seams was evaluated on the basis of the minimal and critical deformation rates of the metal during welding. The maximum technological strength was achieved by using type NMts5 and NMtsAT3-1-0.6 wires. The data produced allow only a qualitative estimation of the influence of individual alloying elements on hot crack resistance of seams. To estimate the influence of welding rate on critical deformation rate, pairs of nickel specimens were spot melted using the same wires. The studies showed that spot melting is a more rigid testing method and that unalloyed seam metal has the greatest sensitivity to changes in the thermal cycle of welding.

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USSR

UDC: 534.222.2

DERIBAS, A. A., KUZ'MIN, G. Ye.

"Motion of a Metal Tube Under the Effect of Products of Explosion"

V sb. Dinamika sploshn. sredy, Vyp. 8 (Dynamics of a Continuous Medium--collection of works, No 8), Novosibirsk, 1971, pp 56-70 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7B236)

Translation: The authors consider motion of a thin-walled metal tube when an explosive in contact with the tube is detonated in two cases: 1) the explosive charge is located on the outer surface of the tube around its circumference, has a finite thickness and borders with a vacuum, and 2) the charge is located inside the tube and fills it solidly throughout the entire cross section. It is assumed that in both cases the detonation front is flat, the detonation wave satisfies the Chapman-Jouguet rule, and the products of the explosion comprise a polytropic thermally nonconductive gas. The motion of the products of the explosion is analyzed in the cylindrical coordinate system which is tied to the detonation wave. The equations describing the motion of the products of the explosion are solved by the method of characteristics. The initial section was cal-

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DERIBAS, A. A., KUZ'MIN, G. Ye., Dinamika sploshn. sredy. Vyp. 8, Novosibirsk, 1971, pp 56-70

culated by the power series method. The material on the initial section of the tube was considered compressible in calculating its motion. A system of transcendental equations is derived whose solution defines the maximum angle of turn of the flow on the initial section. The results of the calculations are presented graphically in the form of functions of the linear coordinate (along the wall of the tube), the thickness of the tube wall, its shape, the tangent of the angle of turn of the flow, etc. Bibliography of ten titles. O. K. Rozanov.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR UDC 631.42.05:632.954

KUZ'MIN, I. A., Candidate of Agricultural Sciences, Institute of Timber of the Karel'sky Branch of the Academy of Sciences USSR

"Retention of Herbicides in Air-Dried Soil Stored Under Laboratory Conditions"

Moscow, Khimiya v Sel'skom Khozyzystne, No 7, Vol 11, 1973, pp 63-65

Abstract: Samples of soils from various A and B horizons were treated with dalapon (transliterated) and sodium trichloroacetate and stored various lengths of time before analysis. The deactivation of the herbicides were determined biologically. Four measurements were made at intervals of 11 to 13 months. Barley was grown repeatedly until there was no significant difference between that grown on treated soil (equivalent to 50 kg/hectare) and on untreated soil (the control). Both the various horizons and the different compounds exerted different influences on the growth of the barley but there was no evidence that the herbicides decomposed with time under these particular storage conditions.

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UDC 621.791.756:546.74:546.56

KUZ'MIN, G. S., KUZ'MIN, I. F., and DOBRYNIN, V. P., Perm Polytechnical Institute

"Temperature Fields in Welding Nickel With Copper and Stainless Steel Under Flux"

Kiev, Avtomaticheskaya Svarka, No 12, Dec 70, pp 26-28

Abstract: A study was made of the heat distribution in automatic welding of NP2 nickel with M1 copper and Kh18N10T stainless steel. The experiments described were made on plates of these three metals measuring 500 x 150 x 5 mm, which were butt-welded without preparation of the edges by the ADF-500 automatic machine. The nickel and stainless steel were welded with Sv-OKh19N9 wire under experimental ceramic flux, and the nickel and copper specimens were welded with NMZhMts 28-2.5-1.5 under fused flux type An-26. To study the heat distribution in welding the different types of plates, the thermic cycles of points at various distances from the seam axis were recorded with the use of Chromel-aluminum thermocouples and the N-700 oscilloscope. It was found that the polarity of the welding current strongly affects the heat distribution.
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USSR

UDC 620.193.6

SOLOV'YEV, S. P., and KUZ'MIN, I. I.

"Radiation Modification of Inorganic Materials"

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleyev, Vol 18, No 3 1973, pp 308-312

Abstract: A review with 41 references discussing the effect of radiation on inorganic nonmetallic materials. In general, γ-irradiation increased the catalytic activity of the materials tested. Radiation proved to be also beneficial in case of piesoceramic materials designed for strong electric fields, lowering the nonlinearity of the relationship between dielectric permeability and the voltage applied, and decreasing the dielectric losses. The ageing process increases under the influence of γ-irradiation. Finally, radiational modification can be used in alloying silicon materials uniformly throughout even large crystals. The authors believe that this branch of science will be explored even more in the near future.

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USSR

UDC: 51

KUZ'MIN, I. V., and MIGUNOVA, L. V.

"A Mathematical Model of Municipal Traffic Control"

Pribory i sistemy avtomatiki. Resp. mezhved. tematich.-tekhn. sb. (Automation Devices and Systems. Republic Interdepartmental Thematic Scientific and Technical Collection), 1973, vyp 27, pp 10-14 (from RZh-Matematika, No 9, Sep 73, Abstract No 9V596 by the authors)

Translation: The problem of the public transportation load on a route is examined by the method of queuing theory. A model for the movement of a conveyance and filling with passengers is constructed in the form of differential equations, the main parameters of the model being traffic intensity and the intensity of passenger flows. The law of distribution of passenger streams is arbitrary.

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USSR

UDC: 51

KUZ'MIN, I. V., BELOGUROV, V. P., MIROSHNICHENKO, V. T.

"Determining Optimum Inventories for Steady-State Production Processes"

Pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb. (Devices and Systems of Automation. Republic Interdepartmental Thematic Scientific and Technical Collection), 1973, vyp. 26, str 103-106 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V549 by the authors)

Translation: The paper investigates the problem of determining optimum inventories for stationary production processes. Analytical expressions are presented which enable determining the advisability of introducing reserves and the capacity of warehouses.

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USSR

UDC: 51

KUZ'MIN, I. V., BELOGUROV, V. P., and MIROSHNICHENKO, V. T.

"Determining the Optimal Reserves for Stationary Productive Processes"

Pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb. (Automation Systems and Instruments, Republic Interdepartmental Thematic Scientific-Technical Collection) No 26, 1973, pp 103-106 (from RZh--Matematika; July, 1973; Abs. No. V549)

Translation: The authors investigate the problem of determining the optimal reserves for stationary productive processes. Analytic expressions are given which permit determination of the best way for introducing the reserves and the capacity of warehouses. Authors' abstract.

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USSR

UDC 657.783:621.396.62

KUZ'MIN, I. V., Doctor of Technical Sciences, BELOGUROV, V. P., Candidate of Technical Sciences, MIROSHNICHENKO, V. T.

"Selecting the Optimum Capacity of Intermediate Storage Points in Mass Production"

Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No 5, Sep/Oct 72, pp 22-24

Abstract: The paper deals with the problem of making a certain product which requires a number of component parts. The production quota is satisfied on the average, but not "rhythmically", i. e., sometimes the quota is not met, and sometimes there is a surplus of the product. This disruption in rhythm is determined to a considerable extent by the availability of the component parts and can be alleviated by building up stocks. Since this involves economic losses, the problem is to find the optimum volume of reserve stocks. A criterion of optimality is proposed which gives the overall cost of losses per unit of time per component part, and a solution is found for the equation giving the derivative of this criterion with respect to the reserve stocks when this ratio is equal to zero. A numerical example is given.

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USSR

UDC: 621.391.2:519.27

KUZ'MIN, I. V., PODLESNYY, N. I., RUBANOV, V. G.

"One Method of Selecting the Optimum Set of Parameters for Testing to Determine the Operability of Complex Systems"

Radiolektronika Letatel'n. Apparatov [Aircraft Electronics - collection of works], No 3, Khar'kov Aviation Institute, 1971, pp28-33 (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 3, 1972, Abstract No 3 A338, from the resume)

Translation: Problems of the selection of the optimal set of test parameters for determination of the operability of complex systems are studied. The method of selection of the number of test parameters is based on the criterion of maximum reliability of the test results. Cases of dependent and independent parameters are studied, with limitations placed on the testing time of the system tested. 1 figure; 5 tables; 6 biblio refs.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

UDC: 51

KUZ'MIN, I. V., DEDIKOV, E. A., KUKHAREV, B. Ye.

"A Method of Constructing a Global Criterion in Mathematical Programming Problems"

Mekhaniz. i avtomatiz. upr. Nauch.-proizv. sb. (Mechanization and Automation of Control. Scientific-Production Collection), 1971, No 6, pp 11-12 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V371)

Translation: A procedure is considered for reducing the object functions of a mathematical programming problem to a united mathematical form which can be used as a basis for formulating global criteria. Two types of global criteria are proposed for evaluating a compromise solution from the standpoint of the minimum sum of losses relative to each localized criterion with regard to weight coefficients, and the minimum of maximum losses (minimax). Errors in linearizing the functions of localized criteria are presented. Authors' abstract.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

Theoretical Automation

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KUZ'MIN, I. V., DEDIKOV, E. A., KUKHAREV, B. Ye.

"Method of Obtaining a Global Criterion in Problems of Mathematical Programming"

Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya; November-December, 1971; pp 11-2

Abstract: The authors consider a procedure for reducing specific functions of a problem in mathematical programming to a single mathematical form, on the basis of which global criteria can be formulated. Two types of global criteria are suggested for evaluating a compromise solution from the point of view of the minimum of the sum of the losses with relation to each local criterion, taking into account the weight coefficients and the minimum of the maximum losses (minimax). The errors in linearization of the functions of local criteria are found.

The article includes 5 equations and a graph showing a function and its linearization.
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UDC: 621.396.677.833(088.8)

DEMENT'YEV, V. I., KUZ'MIN, I. V., and LOGINOV, I. V.

"Passive Relay"

Avt. sv. SSSR (Author's Certificate USSR) Class 21a[4], 46/02, (H 01 q 15/00), ... 275171, Application 19.02.69, Publication 12.10.70 (from Ref-Andiktekhnika, No. 3, March 71, Abstract No. 3B68P)

Translation: The proposed device consists of a reflecting array with curvilinear edges. The upper and lower edges are made in different parabolic curves with a common focal axis.

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USSR

UDC 681.3

KUZ'MIN, I. V., BARBASH, I. P., TRUKHIN, G. P.

"Optimization of the Structure of a Logic Device"

Tekhn. Kibernetika. Vyp. 8 [Engineering Cybernetics, No 8 -- Collection of Works], Kiev, 1970, pp 55-66, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V578 by V. Mikheyev).

Translation: A mathematical model is produced of the structure of a logic device for realization of any Boolean function of k variables in the logic bases AND-NOT (OR-NOT) in the form $f(x_1, x_2, \ldots, x_k) = x_1 \cdot f(1, x_2, \ldots, x_k) \cdot x_1 f(0, x_2, \ldots, x_k)$.

$$f(x_1, x_2, \ldots, x_k) = x_1 \div f(1, x_2, \ldots, x_k) + x_1 + f(0, x_2, \ldots, x_k).$$

The optimization of a logic device with mixed structure is performed with and without consideration of the load limitations of the NAND (NOR) logic elements. It is shown that in both cases there is a unique point, placement of an adjustment unit at which leads to minimum cost of the logic device with fixed number of variables.

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UDC 681.3

KUZ'MIN, I. V., BARABASH, I. P.

"Mathematical Model of the Structure of a Logic Device"

Tekhn. Kibernetika, Vyp. 8, [Engineering Cybernetics, No 8--Collection of Works], Kiev, 1970, pp 47-54, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V598 by V. Mikheyev).

Translation: The following are proven:

Theorem 1. Suppose function $F(\omega_1, \omega_2, \ldots, \omega_n)$ $(N \geq 2)^k$ depends significantly on all N arguments. Then there are functions $\psi_i(x_1, x_2, \ldots, x_k, y_1, y_2, \ldots, y_m)$ $(1 \leq i < 2^k)$ and (if $N > 2^h$) $x_j(x_1, x_2, \ldots, x_k)$ $(2^k + 1 \leq i < N)$ such that in a logic algebra function $f(x_k, y_m)$ can be represented in the form:

$$f(x_k, y_m) = F(\psi_1[x_1, x_2, \ldots, x_k, \ldots, x_k, f(0,0,\ldots,0, y_1, y_2, \ldots, y_m)], \ldots \psi_{2^k}[x_1, x_2, \ldots, \ldots, x_k, f(1,1,\ldots,1, y_1, y_2, \ldots, y_m)], x_{2^k+1}(x_1, x_2, \ldots, \ldots, x_k), \ldots, x_N(x_1, x_2, \ldots, x_k)].$$

Theorem 2. If function $F(\omega_1, \omega_2, \ldots, \omega_N)$ depends significantly on all its arguments and takes on its true (or false) value with a unique set of these arguments, there are functions $\psi_i(x_1, x_2, \ldots, x_k, y_1, y_2, \ldots, y_m$

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UDC 681.3

KUZ'MIN, I. V., BARABASH, I. P., Tekhn. Kibernetika, Vyp. 8, Kiev, 1970, pp 47-54.

$(1 \leq i \leq 2^k)$, such that any logic algebra function $f(x_1, \ldots, y_m)$ can be represented by an expansion such as:

$$f(x_k, \ldots, y_m) = F(\varphi_1[x_1, x_2, \ldots, x_k, f(0, 0, \ldots, 0, y_1, y_2, \ldots, y_m)], \varphi_2[x_1, x_2, \ldots, x_k, f(1, 0, \ldots, 0, y_1, y_2, \ldots, y_m)], \ldots, \varphi_{2^k}[x_1, x_2, \ldots, x_k, f(1, 1, \ldots, 1, y_1, y_2, \ldots, y_m)]).$$

and this expansion is unique.

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USSR UDC: 621.396.677.833

DEMENT'YEV, V. P., KUZ'MIN, I. V., LOGINOV, I. V., LOKSHIN, V. L., YAMPOL'SKIY, V. G.

"A Passive Radio Relay Unit"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 22, 1970, Soviet Patent No 275171, Class 21, filed 19 Feb 69, p 42

Abstract: This Author's Certificate introduces a passive radio relay unit made up of a reflecting array with curvilinear edges. As a distinguishing feature of the patent, the mean effectiveness of the unit is increased, and especially the effectiveness in the case of subrefraction by making the upper and lower edges of the array conform to different parabolic curves with a common focal axis and a high ratio of the focal parameters of the parabolic curves, which may, for instance, be equal to one hundred.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

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UDC 51:155.001.57:518.9

KUZ'MIN, I. V., LYUDVICHEK, K. V.

"Criteria for Professional Selection of Automatic Control System Operators"

Tekhn. Kibernetika, Vyp. 8, [Engineering Cybernetics, No 8--Collection of Works], Kiev, 1970, pp 15-20, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V687 by V. Mikheyev).

Translation: A criterion for professional selection of operators is suggested, expressed by the following inequality:

$$P_K < P_H,$$

where P_K is the minimum value of operator reliability allowing an operator to operate successfully in a given automatic control system; P_H is the experimental value of reliability of operators.

Experimental production of the characteristics of reliability of operators in an emergency, stressed situation is described. Value P_K is determined by the expression:

$$P_K = \frac{P_{acy}}{P_T},$$

where P_{acy} is the reliability of the automatic control system; P_T is the reliability of the equipment in the system. For ACS, the control process of which

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

KUZ'MIN, I. V., LYUDVICHEK, K. V., Tekhn. Kibernetika, Vyp. 8, Kiev, 1970, pp 15-20. UDC 51:15:001.57:519.9

is performed by pressing buttons in response to switching of transparent lighted display patterns on or off, the following criterion for professional selection is suggested:

$$P_s = \prod_{i=1}^{m} P_{\phi i} \prod_{j=1}^{n} P_{yj},$$

where $P_{\phi i}$ is the reliability of fixation of the ith pattern; P_{yj} is the reliability of the jth control action.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

1/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--EFFECT OF COOLING ON THE STRUCTURE OF VACUUM CAST IRON -U-

AUTHOR-(02)-KUZMIN, I.V., ALAGZHALYAN, YE.N.

COUNTRY OF INFO--USSR

SOURCE--LITEINOE PROIZVOD. 1970, (1), 35-6

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--CAST IRON, VACUUM TECHNIQUE, METAL CASTING, METAL COOLING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1928 STEP NO--UR/0128/70/000/001/0035/0036

CIRC ACCESSION NO--AP0132190

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

2/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132190

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CONVENTIONAL GRAY CAST IRON (C 3.2, SI 2.0, MN 1.5, P 0.3, AND S 0.035 WT. PERCENT) WAS CHOSEN FOR THE STUDY OF THE DEPENDENCE OF SUPERHEATING TEMP., HOLDING TIME, AND DEGREE OF VACUUM ON STRUCTURAL CHARACTERISTICS. SPECIMENS WERE CASE UNDER IDENTICAL CONDITIONS, AND THE MELTING WAS PERFORMED IN VACUUM AS WELL AS IN VARIOUS AMTS. EXPTL. MELTS WERE CARRIED OUT IN SILICA CRUCIBLES AT 1300-2000EGREES AT 1 TIMES 10 PRIMED NEGATIVE TORR. THE COOLING RATE WAS VARIED 24-250EGREES PER MIN. CONVENTIONALLY MELTED CAST IRON CHANGED WITH INCREASED COOLING RATE WITHIN THIS RANGE FROM REFFITE PEARLITE TO PEARLITE CEMENTITE, WHILE THE VACUUM MELTED CHANGED ONLY TO PEARLITE FERRITE. WITH INCREASED SUPERHEATING TEMP. AND DESULFURIZATION THE FERRITE FORMATION PROCEEDED MORE INTENSELY IN VACUUM CAST IRON THAN IN CONVENTIONAL CAST IRON. THE PRINCIPAL STRUCTURAL CHARACTERISTIC OF VACUUMIZED CAST IRON WAS THE FORMATION OF ANOMALOUS FERRITE IN THE SHAPE OF A BULLS EYE WITH FORMATIONS OF PERALITE REGIONS ALL AROUND. THESE FORMATIONS ARE INTERRELATED WITH THE FORMATION OF FINELY DISPERSED GRAPHITE, WHICH OCCURRED PREVIOUSLY.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

UDC 518.5:681.3.06

KUZ'MIN, I. V.

"Automatic Testing and Control Systems"

Tekhn. Kibernetika. Vyp. 8 [Engineering Cybernetics, No 8 -- Collection of Works], Kiev, 1970, pp 5-8, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V637 by V. Mikheyev).

Translation: This brief article presents a rough outline of an automatic testing and control system and a table listing the basic problems arising in the development of these systems, a mathematical apparatus for solution of these problems and criteria for evaluation of their effectiveness.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

UDC: 8.74

BRAKHIN, V., KARGALOV, B., KUZ'MIN, K.

"Interpreting System for the 'Ural-14' Computer Oriented for the Diur-14-1 Controller"

V sb. Elektronno-vychisl. tekhn. i programmir. (Electronic Computer Technology and Computer Programming--collection of works), vyp. 4, Moscow, "Statistika", 1971, pp 5-18 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V1011)

Translation: The paper describes the purpose and structure of the IS DIUR-14-1 interpreting system, requirements for standard programs, and the organization of the standard program board. It is noted that the DIUR-14-1 controller-monitor has a modular structure; the operating order of the modules in the IS DIUR-14-1 interpreting system is indicated, and a list of possible troubles in operation of the interpreting system is given. Authors' abstract.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR K UDC 547.342

KUZ'MIN, K.I., AND PANFILOVICH, Z. V., Kazan' Chemical Technological Institute imeni S. M. Kirov, Kazan, Ministry of Higher and Secondary Specialized Education RSFSR

"Synthesis and Properties of Bis(dialkylarsine)diacetylenes"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 1111-1112

Abstract: The authors synthesized five previously undescribed bis(dialkylarsine)diacetylenes by the interaction of dialkyliodoarsine and dimagnesium dibromodiacetylene. A study of the UV spectra of the resultant compounds indicates that the p-electrons of arsenic take part in the conjugation with the system of triple bonds.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

UDC 547.342 + 547.391 + 547.39'26

KUZ'MIN, K. I., and PAVLOVA, L. A., Kazan' Institute of Chemical Technology imeni S. M. Kirov, Kazan, Ministry of Higher and Secondary Specialized Education RSFSR

"Synthesis of Dialkylarsinacetylene Acids and Their Esters"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 1112-1113

Abstract: Dialkylarsinacetylene acids were obtained for the first time by the interaction of magnesium-bromine derivatives of dialkylethynylarsines with carbonic acid. The interaction of the ethyl ester of chlorocarbonic acid with magnesium-bromine derivatives of dialkylethynylarsines gives ethyl esters of dialkylarsinacetylene acids. The structure of the resultant compounds was confirmed by IR spectra. The frequency of the acetylene bond in the IR spectrum varies insignificantly with changes in the nature of the group replacing the ethynyl hydrogen atom, whereas the absorption band intensity depends on the nature of the substituent.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--REACTION OF PHENYLACETYLENE WITH SOME ORGANIC ARSENIC COMPOUNDS -U-

AUTHOR-(03)-KUZMIN, K.I., PANFILOVICH, Z.U., GOLOVINA, L.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 703

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC ARSENIC COMPOUND, ACETYLENE HYDROCARBON, HEAT EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0888 STEP NO--UR/0079/70/040/003/0703/0703

CIRC ACCESSION NO--AP0124551

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

2/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124551

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF R SUB2 ASI WITH A 2 FOLD EXCESS OF PHC TRIPLE BOND CH AND PYRIDINE BY PROLONGED HEATING ON A STEAM BATH GAVE R SUB2 ASC TRIPLE BOND CPH (R SHOWN): C SUB5 H SUB11, 25PERCENT, B SUB1 164-7DEGREES, D SUB20 1.0598, N PRIME20 SUBD 1.5480; SIMILAR REACTION WITH R SUB2 ASOAC IN THE PRESENCE OF PYRIDINE OR WITH R SUB2 ASOET WITHOUT THE BASE ALSO GAVE: R SUB2 ASC TRIPLE BOND CPH AND EITHER ACOH OR ETOH, RESP. PRODUCTS WITH R EQUALS BU OR C SUB5 H SUB4 WERE PREPD. BU SUB2 ASOAC B SUB1 85-7DEGREES, 1.1158, 1.4720; (C SUB5 H SUB11) SUB2 ASOAC B SUB1 106-7DEGREES; 1.0705, 1.4670. THESE WERE PREPD. FROM R SUB2 ASOBU AND AC SUB2 O.

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UDC 547.34.2

KUZ'MIN, K. I., and PAVLOVA, L. A.

"Dialkylarsinoethynylketones"

Leningrad, Zhurnal Obshchey Khimii, Vol 39, No 8, pp 1797-1798

Abstract: The methods of preparing acetylene ketones discussed in earlier research include the interaction of organomagnesium derivatives of acetylene with acid chlorides; the reaction is accompanied by the formation of diacetylene carbinols

$$RC{\equiv}CMgX + (R'CO)_2O \longrightarrow RC{\equiv}CCOR' + R'COOMgX \qquad (1)$$

$$RC{\equiv}CCR' + RC{\equiv}CMgX \longrightarrow RC{\equiv}C{-}C{-}C{\equiv}CR$$

(O above the first C; R' and OMgX below the second C)

The authors used this reaction for synthesizing new (dialkylarsino) ethino ketones. It appears that by conducting the synthesis with the excess of the anhydride at a maximum temperature of -60° C and adding gradually the organomagnesium derivative of dialkylarsinyl-acetylene to the ether solution of the anhydride, the reaction will terminate at the stage of the formation of the ketone

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USSR

KUZ'MIN, K. I., et al, Leningrad, Zhurnal Obshchey Khimii, Vol 39, No 8, pp 1797-1798

$$2R_2AsC{\equiv}CMgBr + 2(R'CO)_2O \longrightarrow 2R_2AsC{\equiv}CCR' + MgBr_2 + (R'COO)_2Mg \quad (2)$$

O

The obtained ketones are slightly colored, readily distillable (without decomposition) liquids which are unstable in air. In reactions with acid chlorides, the organomagnesium derivatives of dialkylethynylarsines behave as ordinary magnesium bromoalkyls. The synthesis yielded a total of five new carbonyl dialkylethynylarsines never described before in literature.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

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UDC: 624.824:624.131.6

ZINEVICH, N. I., Engineer, KUPERMAN, V. L., Candidate of Technical Sciences, KUZ'MIN, K. K., Engineer, and TOLKACHEV, L. A., Engineer

"Erection of an Earthfill Dam With an Injected Core and a Film Type Diaphragm Without Drainage of the Foundation Pit"

Moscow, Gidrotekhnicheskoye Stroitel'stvo, No 5, May 73, pp 20-23

Abstract: The authors describe a dam built for the Atbashinskaya Hydroelectric Power Station on the Atbasha River. The dam was designed for a head of 75 m and is located in rough mountain terrain associated with complex seismic and geologic conditions. This is an earthfill type dam with an injected core and a film type diaphragm without drainage of the foundation pit. This method of construction made it possible to cut down on construction time by eight to ten months and save 300 thousand rubles. The use of a film type diaphragm and the method for fastening it to the steep stone walls made it possible to locate an earthfill dam in a narrow canyon. These conditions ensured a significant reduction in the dam volume and reduced the cost of construction (900 thousand rubles). The use of the film diaphragm as an antifiltration device made it possible to continue construction during the winter months at temperatures as low as -20°C. The construction of special galleries for injection operations made it possible to continue the dam fill operations without delays.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

UDC: 621.375.7.002.5

VYSTAVKIN, A. N., GUBANKOV, V. N., KUZ'MIN, L. S., LIKHAREV, K. K., MIGULIN, V. V.

"Concerning the Particulars of Parametric Regeneration in Superconducting Point Contacts"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 4, Apr 72, pp 896-899

Abstract: The authors analyze parametric interactions in a point contact for the microwave case of open-circuit combination frequencies. The analysis is based on the equivalent circuit of the point contact proposed in a previous paper (A. N. Vystavkin et al., Radiotekhnika i Elektronika, Vol 15, No 11, 1970, p 2404). It is found that there is a region of negative resistance with a smooth transition to a region of synchronization. The consequences and region of applicability of this effect are discussed.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

Oscillators and Modulators

USSR

UDC: 621.373.42.029.64:621.385.64(088.8)

UMANSKIY, V. S., KUZ'MIN, L. V.

"A Device for Automatic Frequency Control of Magnetron Oscillators"

USSR Author's Certificate No 259175, filed 15 Feb 67, published 28 Apr 70 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12B308 P)

Translation: This Author's Certificate introduces an AFC device for magnetron oscillators which contains a waveguide channel, a directional coupler, attenuators, a thermocompensated reference cavity, video detector, video amplifier, paraphase inverter, peak detectors, DC amplifier, magnetic amplifier, reversible actuating motor and mechanical frequency tuning system. To improve the stability of the frequency of oscillations generated by the magnetron, two self-contained peak detectors are connected to the output of the video amplifier through the paraphase inverter. The outputs of these peak detectors are connected through DC amplifiers to the control windings of the magnetic amplifier, which are interconnected in series opposition. The magnetic amplifier is connected to the reversible actuating motor of the system for mechanical frequency tuning of the magnetron. V. P.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

UDC: 621.396.662

KUZ'MIN, L. V., OMANSKIY, V. S.

"A Device for Automatically Adjusting the Frequency of Pulse Magnetron Oscillators"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 19, 1970, Author's Certificate No 272386, filed 4 Aug 67, p 47

Abstract: This author's certificate introduces a device for automatically adjusting the frequency of pulse magnetron oscillators with external synchronization. The device contains an automatic phase adjustment ring which consists of a phase detector, video amplifier, phase inverter, peak detectors, DC amplifiers, magnetic amplifier, and an actuating mechanism for frequency tuning. The device also contains an external synchronizing signal source and a magnetron pulse oscillator. As a distinguishing feature of the patent, the dynamic range of synchronization is extended by connecting a frequency detector with external cavity resonator in the output channel of the oscillator through a directional coupler. The external cavity resonator is tuned to the frequency of the synchronizing signal. The output of the frequency detector is connected through an amplitude selector to a summation circuit connected between the video amplifier and the phase detector in the automatic phase adjustment ring.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--PHOTOSENSITIZED HOMOLYTIC DISSOCIATION OF SINGLE BONDS -U-

AUTHOR-(02)-KUZMIN, M.G., GUSEVA, L.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VYS. ENERG. 1970, 4(1), 24-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--METHYLENE, CARBON DIOXIDE, FREE RADICAL, PHOTOSENSITIVITY, DISSOCIATION, KETONE, CHEMICAL BONDING, QUANTUM CHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1117 STEP NO--UR/0456/70/004/001/0024/0027

CIRC ACCESSION NO--AP0104515

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

2/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104515

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. (MECO SUB2) SUB2, PHCH SUB2 I, AND ETOND SUB2 WERE PHOTOSENSITIZED IN PH SUB2 CO TO SHOW THE HOMOLYTIC DISSOCN. OF THE SINGLE BONDS O-O, C-I, AND O-N, RESP. QUANTUM YIELDS WERE NEAR UNITY FOR ALL COMPDS., WITH ACTIVATION ENERGIES 1.3, 1.65, AND 1.6 EV FOR THE COMPDS. PRODUCING ME AND CO SUB2, PHCH SUB2 AND I, AND ETO AND NO SUB2 RADICALS, RESP. QUANTUM YIELDS ARE LOW USING AS SENSITIZER C SUB6 H SUB6, 2',ACETONAPHTHONE, 1,NAPHTHYL PHENYL KETONE, AND ARE MODERATE OR HIGH USING 1,CHLORONAPHTHALENE, MICHLER'S KETONE, AND ANTHRAQUINONE.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

1/2 028 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--REACTIONS OF PROTON PHOTOTRANSFER IN NONAQUEOUS SOLUTIONS -U-

AUTHOR-(03)-KUZMIN, M.G., UZHINOV, B.M., CHAN, O.T.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(3), 475-80

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SPECTROPHOTOMETRIC ANALYSIS, PHOTON, NAPHTHOL, DIETHYLAMINE, THERMODYNAMIC CHARACTERISTIC, CYCLOHEXANE, COMPLEX COMPOUND, EXCITED STATE, SOLVENT ACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1991 STEP NO--UR/0368/70/012/003/0476/0480

CIRC ACCESSION NO--AP0132252
UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

2/2 028 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132252

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE PROCESS WAS STUDIED SPECTROPHOTOMETRICALLY AND SPECTRO FLUORIMETRICALLY BY USING THE 2,NAPHTHOL,ET SUB2 NH SYSTEM IN ETOH, CYCLOHEXANE, AND C SUB6 H SUB6. THERMODYNAMIC VALUES ARE GIVEN FOR THE VARIOUS SYSTEMS. THE RESULTS INDICATE THAT IN NONPOLAR CYCLOHEXANE A H-BONDED COMPLEX RESULTS IN THE EXCITED STATE, WHEREAS IN C SUB6 H SUB6 AND ETOH ION PAIRS AND DISSOCD. IONS, RESP., ARE FORMED.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

1/2 027 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--PRODUCING A METALLIC SURFACE -U-

AUTHOR-(02)-YAROPOLOV, I.I., KUZMIN, M.N.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,817
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METAL COATING, ENAMEL, PROTECTIVE COATING, CHEMICAL PATENT, METAL CASTING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0846 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0131439

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 027

CIRC ACCESSION NO--AA0131439

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METALLIC SURFACE, E.G., FOR USE IN CASTING TECHNOL., IS PREPD. BY SPRAY COATING THE METAL ON THE PATTERN AND APPLYING A LAYER OF PENTOPHTHALIC ENAMEL.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

Kuz'min, M.P.

space medicine

SO: JPRS 53801
13 Aug 71

SHORT COMMUNICATIONS

UDC 612.842.6-058.9:061.12

NATURE AND DISTRIBUTION OF INTRAOCULAR PRESSURE IN HEALTHY PERSONS AGED 25-40 ENGAGED IN MENTAL WORK

M. (Grand Rapids) [illegible]

[Article by T. A. Petrov and M. P. Kuz'min, Moscow, Zoneichekaya Biologiya i Meditsina, Russian, Vol 5, pp 3, 1971, pp 80-82, submitted 23 March 1970]

One of the most important problems in expert examination and selection of cosmonaut and predicting the dependability of their health during prolonged space flights is the detection of latent pathology, which is closely related to the upper limit of age for cosmonauts.

Most anthropometric indices (height, weight, physical strength, etc.) appear consistently from their parameters characteristic for the late 19th and early 20th centuries (Bemporad, 1940; S. A. Platonova, 1928; M. M. Rabinovskiy, 1960; V. S. Solov'yeva, 1967).

This makes it essential to reexamine the indices of the anatomic and functional state of human organs and systems.

A solution of the problem of normalcy limits and pathology is impossible without determining the limits of physiological variations in separate functions in the human body, taking into account age, occupation and the observation period.

One of the most important physiological functions ensuring normal operation of the visual analyzer is the maintenance of normal intraocular pressure. However, ophthalmologists are not unanimous in their conclusions concerning the range of normal intraocular pressure.

In the method for measuring ophthalmotonus [illegible] adopted in the Soviet Union some authors feel that the physiological limit of intraocular pressure variation falls in the range from 15 to 30 mm Hg (A. Ya. Yemchenko, 1960; L. K. Vasil'yeva, 1960; Yu. V. Fedin, 1962; V. S. Anan'yev, 1965; E. S. Avetisov, et al., 1970); others consider the normal limits to be less [illegible] (V. P. Filatov, 1958; D. V. Kantor, [illegible], 1960; V. G. Arshavskiy, 1960), and finally, individual researchers

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

UDC 576.851.511.097.2

KUZ'MIN, N. A.

"Some Data on the Somatic Antigens of Bac. anthracis"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 48, No 2, Feb 71, pp 131-137

Abstract: By carrying out successive adsorption of fractions of commercial precipitating anthrax serum on cultures of bacteria of species other than Bacillus anthracis and using the fluorescent antibody method to check adsorption, it was established that in addition to specific Bac. anthracis antigens, a number of somatic antigens common to those of Bac. cereus (Bac. pseudoanthracis), Bac. subtilis (Bac. mesentericus), Bac. cereus (Bac. anthracoides), Bac. cereus (Bac. cereus), and Bac. megaterium is present in Bac. anthracis. The closest similarity in antigenic composition was found between Bac. anthracis and Bac. pseudoanthracis.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

1/2 024 UNCLASSIFIED PROCESSING DATE--11[illegible]79

TITLE--AMPLITUDE DEPENDENT INTERNAL FRICTION IN ALUMINUM ALLOYS -U-

AUTHOR--CHELNOKOV, V.A., STEPANOV, V.A., KUZMIN, N.L.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 841-7

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALUMINUM ALLOY, METAL INTERNAL FRICTION, ZINC ALLOY, COPPER ALLOY, MAGNESIUM CONTAINING ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0647 STEP NO--UR/0181/70/012/003/0841/0847

CIRC ACCESSION NO--AP0105626

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

2/2 024 UNCLASSIFIED PROCESSING DATE--12SEP70

CIRC ACCESSION NO--AP0105626

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AMPLITUDE DEPENDENT INTERNAL FRICTION WAS INVESTIGATED IN ALLOYS OF AL WITH MG, CU, AND ZN. MEASUREMENTS OF THE DECREMENT WERE CARRIED OUT AT 300 AND 500DEGREESK ON THE VIBRATIONAL FREQUENCY OF 400 HZ. INCREASE IN THE CONCN. OF THE DOPING ELEMENTS AFFECTS MORE STRONGLY, THE DECREMENT MEASURED AT INCREASING AMPLITUDE OF THE VIBRATIONS THAN ON THE DECREMENT MEASURED AT DECREASING AMPLITUDE. THIS LEADS TO THE APPEARANCE OF HYSTERESIS OF THE DECREMENT WHICH INCREASES WITH INCREASING DEGREE OF DOPING AND DECREASES WITH INCREASING TEMP. OF TESTING. A MODEL IS PROPOSED FOR EXPLAINING THE EXPTL. DATA IN WHICH IT IS ASSUMED THAT DISLOCATIONS IN ANNEALED AL ALLOYS ARE FIXED BY STRONG ATMS. OF IMPURITIES AND FOR SMALL STRESSES ARE IMMOBILE. AMPLITUDE DEPENDENT INTERNAL FRICTION APPEARS WHEN THE DISLOCATIONS ARE PICKED OUT OF THE ATMS. AFTER THIS PROCESS THE ATM. IS DESTROYED AND THEN THE AMPLITUDE DEPENDENT INTERNAL FRICTION IS DETD. ONLY BY THE INTERACTION OF VIBRATING DISLOCATION SEGMENTS WITH UNIFORMLY DISTRIBUTED IMPURITY ATOMS OF THE SOLID SOLN. THE MODEL PROPOSED MAKES IT POSSIBLE TO CALC., FROM THE AMPLITUDE DEPENDENCE OF THE INTERNAL FRICTION, THE CRIT. SLIDING STRESS. THE DATA OBTAINED BY MEANS OF THE CALCN. COINCIDE WITH THE EXPTL. RESULTS FOR AL-ZN AND AL-CU ALLOYS.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

UDC 660.67:546.19

KUZ'MIN, N. M., FEDOROV, V. A., and FILIPPOV, E. P.

"Combined Method of Deep Purification of Arsenous Chloride"

Moscow, Doklady Akademii Nauk SSSR, Vol 200, No 4, 1971, pp 909-911

Abstract: The article suggests using a combination of extraction and rectification for the purification of arsenous chloride. The initial material to be purified is commerical arsenous chloride obtained by chlorination of metallic arsenic and the dissolution of arsenic trioxide in hydrochloric acid. The three-stage extraction purification is carried out at $V_{AsCl_3} : V_{C_6H_6} : V_{HCl} = 1:1:0.5$. Rectification of the benzene solution of arsenous chloride is carried out on an integral packed-type column made of synthetic quartz. The method provides effective removal of microimpurities from arsenous chloride.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

1/2 061 UNCLASSIFIED PROCESSING DATE--21OCT70

TITLE--CLARIFICATION AND DISINTEGRATION OF GASEOUS BORON TRICHLORIDE (BCL SUB3) BY RADIATION OF A CO SUB2 LASER -U-

AUTHOR-(05)-ARAKELYAN, V.S., KARLOV, N.V., KUZMIN, M.V., PETROV, YU.N., STELMAKH, O.M.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO 3, MAR 70, PP 634-635

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LASER EXCITATION, CARBON DIOXIDE LASER, BORON FLUORIDE, ABSORPTION COEFFICIENT, RESONANCE ABSORPTION, GAS DISSOCIATION, GAS PRESSURE, RADIATION INTENSITY/(U)IK521 SPECTROPHOTOMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1461 STEP NO--UR/0109/70/000/003/0634/0635

CIRC ACCESSION NO--AP0104757

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

2/2 061 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0104757

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER DISCUSSES THE RESULTS OF EXPERIMENTS CONCERNED WITH A DETERMINATION OF THE SATURATION FACTOR AND LIFE TIME OF OSCILLATION OF GASEOUS VORON TRICHLORIDE (BCL SUB3) AND ALSO THE DISINTEGRATION OF THE BCL SUB3 PRIMEB MOLECULE BY THE RADIATION OF A CO SUB2 LASER. THE DEPENDENCE OF THE RESONANT ABSORPTION COEFFICIENT ON PRESSURE IS SHOWN. MEASUREMENTS WERE MADE AT ROOM TEMPERATURE IN A VESSEL 10 CM LONG AND 2.8 CM IN DIAMETER WITH THE AID OF A IKS 21 SPECTROMETER. IN THE REGION OF NONHOMOGENEOUS BROADENING EXTENING AT LEAST TO 5-7 TOR, THE VALUES OF THE ABSORPTION COEFFICIENT AMOUNTED TO ALPHA EQUALS 0.04 CM PRIME NEGATIVE1 TOR, WHICH CORRESPONDS TO THE ABSORPTION CROSS SECTION SIGMA EQUALS 1.1 TIMES 10 PRIME NEGATIVE18 CM PRIME2. THE SATURATION ABSORPTION WAS INVESTIGATED WITH THE AID OF A CO SUB2 LASER WITH AN OUTPUT POWER UP TO 100 WATT. THE TWO CHANNEL METHOD WAS USED FOR SIMULTANEOUS MEASUREMENT OF THE RADIATION POWER ENTERING THE VESSEL WITH THE BCL SUB3 AND LEAVING THE VESSEL. THE POWER LEVEL WAS CHANGED BY A GAS ATTENUATOR IN THE BCL SUB3. THE GAS ATTENUATOR MADE IT POSSIBLE TO CHANGE THE INTENSITY OF THE LASER BEAM, NOT CHANGING THE ENERGY DISTRIBUTION IN THE CROSS SECTION OF THE BEAM. CONTROL OF THE ATTENUATOR WAS ACCOMPLISHED BY A CHANGE OF THE GAS PRESSURE. THE AUTHORS THANK A. M. PROKHOROV FOR CONSTANT ATTENTION TO THE WORK AND FRUITFUL DISCUSSIONS, AND ALSO YU. B. KONEV FOR FREQUENT USEFUL DISCUSSIONS.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

1/2 030 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--CHANGE IN NATRIURESIS FOLLOWING THE INTRAVENOUS INJECTION OF BENZOHEXONIUM -U-
AUTHOR--KUZMIN, O.B.

K

COUNTRY OF INFO--USSR

SOURCE--FARMAKOL. TOKSIKOL. (MOSCOW) 1970, 33(1), 37-9

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DOG, SODIUM, KIDNEY, BLOOD PRESSURE, BLOOD VESSEL, DRUG EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/1697 STEP NO--UR/0390/70/033/001/0037/0039

CIRC ACCESSION NO--AP0103463
UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

2/2 030

CIRC ACCESSION NO--AP0103463

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BENZOHEXONIUM ADMINISTERED I.V. AT 1.5-2.0 MG-KG DID NOT SIGNIFICANTLY AFFECT GLOMERULAR FILTRATION IN ANESTHETIZED DOGS BUT INCREASED TUBULAR REABSORPTION OF NA POSITIVE AND H SUB2 O. THE RENAL EFFECTS CORRELATED DIRECTLY WITH BENZOHEXONIUM INDUCED ARTERIAL HYPOTENSION AND DECREASED PERIPHERAL VASCULAR RESISTANCE.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--POLYADDITION REACTIONS OF SOME ORGANOVINYLCHLOROSILICON HYDRIDES -U-

AUTHOR-(05)-KOBRAKOV, K.I., FEDOROV, L.A., KUZMIN, O.V., NAMETKIN, N.S., CHERNYSHEVA, T.I.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 18(3), 607-19 (CHEM)

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYMERIZATION, ORGANOSILICON COMPOUND, OLIGOMER, CHLORINATED ORGANIC COMPOUND, DIMERIZATION, EPR SPECTRUM, CYCLOHEXANE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0725 STEP NO--UR/0020/70/191/003/0607/0610

CIRC ACCESSION NO--AT0124395

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

2/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124395

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLYMN. OF MESIH(CH:CH SUB2)CL, ETSIH(CH:CH SUB2)CL, PHSIH(CH:CH SUB2)CL, OR SIH(CH:CH SUB2) CL SUB2 IN SEALED TUBES AT 100-50DEGREES IN THE PRESENCE OF H SUB2 PTCL SUB6.6H SUB2 O AND PT-C GAVE OLIGOMERS CONTG. ONLY (CHMESIRCL) SUBN (I) (R SI CL OR PH) STRUCTURES OR I AND (CH SUB2 CH SUB2 SIRCL) SUBN (II) (R SI ME OR ET) STRUCTURES. BESIDES I AND (OR) II (N IS 0-11) THE POLYMN. ALSO GAVE DIMERS SUCH AS 1,4,DICHLORO,1,4,DIMETHYL,1,4,DISILACYCLOHEXANE (III) OR 1,1,4,4,TETRAMETHYL,1,4,DISILACYCLOHEXANE (V). EPR SPECTRA GAVE THE CONFORMATION OF III AND SHOWED THAT IV CONTAINS ISOMERIC 1,3,DICHLORO,1,2,3,TRIMETHYL1,3,DISILACYCLOPENTANE. FACILITY: INST. NEFTEKHIM. SIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

UDC: 621.317.18(088.8)

SORKIN, G. L., KUZ'MIN, P. A.

"An Exact Tuning Indicator"

USSR Author's Certificate No 278793, filed 3 Mar 69, published 26 Nov 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D94 P)

Translation: This Author's Certificate introduces a tuning indicator for radio receivers designed for AM and FM signal reception. The indicator contains a pointer galvanometer connected to the output of an amplitude or fraction detector. To improve the sensitivity of the indicator to weak signals, simplify the indicator circuit, and make it a general-purpose device, the load resistors of the detectors are interconnected, and the point of connection is tied to the housing through the galvanometer.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

UDC: 621.317.16

SORKIN, G. L., KOZ'MIN, P. A.

"A Precision Tuning Indicator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 2[illegible], 1970, Soviet Patent No 278793, Class 21, filed 3 Mar 69, p 47

Abstract: This Author's Certificate introduces a precision tuning indicator for radio receivers designed for signal reception with amplitude and frequency modulation. The unit contains a pointer galvanometer connected to the output of an amplitude or fractional detector. As a distinguishing feature of the patent, the indicator is designed for increased sensitivity to weak signal reception, simplification of the electric circuit, and improved universality. The load resistors of the detectors are connected to each other, and the tie points are connected through the galvanometer to the housing.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

UDC 629.783:014:525(47)

BALAYEV, N. F., GROMOVSKIY, G. L., DANILOV, Yu. I., ZAKHAROV, V. M., KRAVTSEV, N. F., KUZ'MIN, R. N., MAROV, M. Ya., MOROZOV, P. M., NIKITIN, V. Ye., PEROV, S. P., PETUNIN, A. N., UTKIN, V. M., and SHVIDKOVSKIY, Ye. G.

"Scientific Data on the Flight of Automatic Ionospheric "Yantar" Laboratories"

Uch. zap. Tsentr. Aerogidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamic Institute) 1971, Vol 2, No 2, pp 58-65 (from Referativnyy Zhurnal, Raketostroyeniye, No 11, Nov 71, Abstract 11.41.87 Resume)

Abstract: Launches of automatic ionospheric "Yantar' " laboratories with gaseous plasma-ionic engines up to 100-400 km altitudes were conducted with the aid of geophysical rockets, for the purpose of studying prospects of controlled flight, in upper layers of the atmosphere. Performance of gaseous plasma-ionic engines under ionospheric conditions was studied. Parameters characterizing the ion jet-ionospheric plasma interaction, as well as parameters of neutral atmosphere were measured. Scientific data on conducted experiments is presented. 5 figures, 1 table, 11 references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

1/2 C22 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--ATOMIC ORDER IN IRON ALUMINUM ALLOYS STUDIED BY THE MOESSBAUER EFFECT -U-

AUTHOR-(02)-LOSIYEVSKAYA, S.A., KUZMIN, R.N.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(3), 569-77

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--IRON ALLOY, ALUMINUM CONTAINING ALLOY, MOSSBAUER EFFECT, INTERMETALLIC COMPOUND, ALUMINIDE, ALUMINUM ALLOY, ORDERED ALLOY, SOLID SOLUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0334 STEP NO--UR/0126/70/029/003/0569/0577

CIRC ACCESSION NO--AP0126090

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

UNCLASSIFIED PROCESSING DATE--20NOV70

2/2 022

CIRC ACCESSION NO--AP0120040

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE STUDY WAS CARRIED OUT WITH FE,AL ALLOYS CONTG. AL 20-31 AT. PERCENT COOLED TO 240DEGREES AND QUENCHED FROM 400, 520, 600, AND 900DEGREES AFTER A HOLDING TIME OF 50 HR. THE STRUCTURE OF FE SUB3 AL IS REGARDED AS COMPOSED OF 4 EQUIV. SUBLATTICES. THE PROBABILITIES ARE CALCD. OF VARIOUS CONFIGURATIONS OF FE ATOMS IN FE,AL ALLOYS WITH VARYING CONCNS. OF AL AND WITH VARYING DEGREES OF ORDERING. ALLOYS WITH 20-5 AT. PERCENT AL SHOWED THE APPEARANCE OF A STRONG COMPONENT WITH AN EFFECTIVE FIELD OF 255 KOE, AND THIS IS EXPLAINED BY CONCN. DISORDERING. THE FIELD DEPENDS ON AL CONCNS. AT THE NUCLEI OF FE ATOMS WITH VARIOUS CONFIGURATIONS. THE PRESENCE OF FE SUB3 AL SUB3 WAS NOT DEMO. FROM THE MOESSBAUER STUDY OF FE,AL ALLOYS WITH 20-5 AT. PERCENT AL THE 2 PHASE REGION (DISORDERED ALPHA SOLID SOLN. AND FE SUB3 AL IS MUCH MORE NARROW THAN WAS ASSUMED PREVIOUSLY. FACILITY: MOSK. GOSUNIV. IM. LOMONOSOVA, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

1/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--MOSSBAUER EFFECT ON PRIMEI2I SO NUCLEI IN YTTRIUM IRON GARNET -U-

AUTHOR-(04)-GOLOVNIN, V.A., IRKAEV, S.M., KUZMIN, R.N., MILL, V.V.

COUNTRY OF INFO--USSR

SOURCE--JETP LETTERS (USA), VOL. 11, NO. 1, P. 35-7 (JAN. 1970)

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--MAGNETIC FIELD, MOSSBAUER EFFECT, ANTIMONY ISOTOPE, ATOM, NUCLEUS, YTTRIUM, IRON, GARNET, DIAMAGNETISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1751 STEP NO--US/0000/70/011/001/0035/0037

CIRC ACCESSION NO--AP0133656
UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

2/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0133656
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INVESTIGATION REVEALED A SUPEREXCHANGE INDUCTION OF MAGNETIC FIELDS ON THE DIAMAGNETIC SB ATOMS.
FACILITY: MOSCOW STATE UNIV. USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

UDC 548.0:539.171

ZASIMOV, V. S., KUZ'MIN, R. N., and FIROV, A. I., Moscow State University imeni M. V. Lomonosov

"Observation of the Diffraction of Resonant Gamma-Quanta From an FeNi Single Crystal"

Moscow, Kristallografiya, Vol 17, No 4, 1972, pp 864-865

Abstract: Investigation results are presented on the diffraction of resonant gamma-quanta from an FeNi (50 at%Fe) single crystal cut so that its surface corresponded to the (111) crystallographic surface. The gamma-quanta, obtained on a Mössbauer diffractometer, had a natural content of ^{57}Fe isotope. The diffraction maxima and the Mössbauer spectra obtained by scattering of gamma-radiation with an energy of 14.4 kev ($\lambda \sim 0.86$ Å) are discussed. The energy spectrum for the (111) reflex ($\theta_1 = 12°$) shows a characteristic dip; the Mössbauer spectrum for the (222) reflex ($\theta_2 = 24°30'$) has a smaller dip. The increase in the order of reflection is equivalent to the decrease of the effective thickness of the crystal, producing a reduction in the resonance absorption and a relative intensity increase of nuclear scattering. Two figures, fourteen bibliographic references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

UDC: 534.222.2

DERIBAS, A. A., KISELEV, A. N., KUZ'MIN, R. Ye., CHAGELISHVILI, E. Sh.

"Interaction Between Shock Waves and Ceramal"

V sb. Dinamika sploshn. sredy. Vyp. 8 (Dynamics of a Continuous Medium--collection of works, No 8), Novosibirsk, 1971, pp 103-117 (from Zh--Mekhanika, No 7, Jul 72, Abstract No 7B231)

Translation: The article contains a report on the results of calculations of the change in parameters of shock waves formed by detonation of an explosive charge as these waves propagate in three-component ceramals. The alloys were compositions made up of tungsten carbides -- chiefly WC -- and a softer metal -- cobalt. Two cases of interaction are calculated: propagation in a semi-infinite layer of material of a plane shock wave formed by detonation of a charge located on the surface of the material, and the action of a sliding detonation wave on a material surface. The system of equations used in the calculations contains equations of conservation of mass and momentum for the detonation and shock waves, and equations of state for the ceramals and the products of the explosion. The results of the calculations are given in tables and graphs.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

DERIBAS, A. A. et al., Dinamika sploshn. sredy. Vyp. 8, Novosibirsk, 1971, pp 103-117

To carry out the calculations experimentally by the method of reflection, the adiabatic shock curve was determined for VK-8 alloy in specimens 12 mm in diameter and 3-4 mm thick. The dimensions of the particles of hard carbide phase and softer cementing cobalt phase were of the order of 0.5-10 μ. The resultant adiabatic shock curve in the form of a linear relation between the wave velocity D and the mass velocity u is given as $D = 4.52 + 2.28u$ km/s, and is valid over the pressure range of approximately 10^{10}-$6 \cdot 10^{10}$ N/m^2. A method is proposed for calculating the adiabatic shock curves of three-component systems which utilizes knowledge of the adiabatic shock curves of each individual component. The adiabatic shock curve calculated for VK-8 alloy coincides satisfactorily with the experimental curve. The results of calculations of the adiabatic shock waves for WC, VK-11, VK-15, VK-20, VK-25 and VK-30 are given. It is pointed out that the results of experiments on x-ray analysis of the study specimens retained after impact compression to high pressures enable use of the calculated adiabatic shock curves in the pressure interval up to $2 \cdot 10^{11}$ N/m^2. Bibliography of 8 titles. O. K. Rozanov.

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UR 0482

Soviet Inventions Illustrated, Section VI Electrical, Derwent,

2/70

243224 SURFACE PRESSURE ON AN AERODYNAMIC MODEL. In a wind tunnel is complicated to ascertain, and the moderate accuracy obtained limits the usefulness of various methods. The proposal improves accuracy by providing data of higher quality, and also reduces the cost of experiment. The essence of the method is to fill the cavity inside the model with for example, a (coloured) liquid; on the application of some level of internal pressure the liquid arrives through seepage channels at the surface being studied. By this means the pressure exerted over a surface can be ascertained.

30.10.67 as 1193437/40-23.G.A.CHEREMUKHIN et al. (18.9.69) Bul 16/5.5.69. Class 42k. Int.Cl.G 01m.

21

AUTHORS: Cheremukhin, G. A.; Pivkin, Ya. Ya.; Kuz'min, S. K.

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19771667

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

AA0047091 K UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/7a

241061 AERODYNAMIC CHARACTERISTICS OF A MODEL can be determined in a wind tunnel when the model (1) has holes (2) penetrating to its internal cavity (3). Coloured water (5) under pressure (6) is forced into the cavity (3) through the pipe (4). 30.10.67 as 1193436/40-23. G.A.CHEREMUKHIN et al. (12.9.69.) Bul 13/1.4.69. Class 42k, Int.Cl.G 01m.

AUTHORS: Cheremukhin, G. A.; Pivkin, Ye. Ya.; Kuz'min, S. K.

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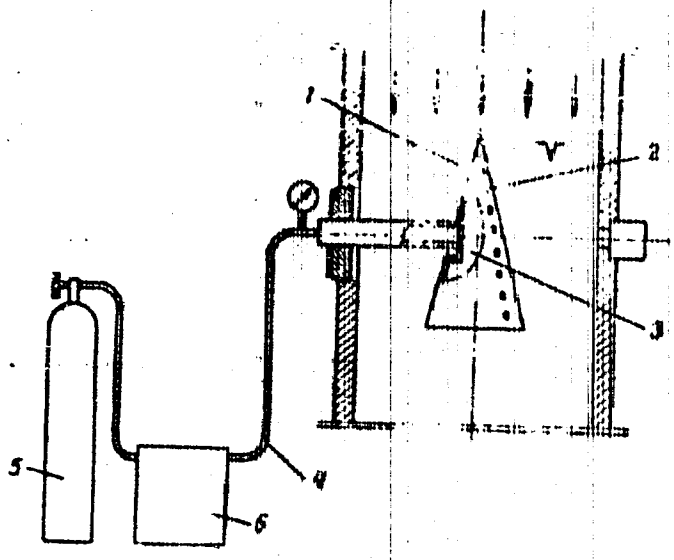

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

1/2 032 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--METABOLISM OF THE NUCLEAR RNA OF THE CEREBRAL CORTEX IN THE PROCESS OF MOTOR ALIMENTARY CONDITIONING -U-
AUTHOR-(04)-KUZMIN, S.M., TIMKIN, V.N., MEZENTSEV, A.N., VASILYEV, O.P.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 3, PP 474-477
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--CONDITIONED REFLEX, BRAIN, NERVE TISSUE, RNA, LEARNING THEORY, METABOLISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0385 STEP NO--UR/0247/70/020/003/0474/0477

CIRC ACCESSION NO--AP0121072
UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

UNCLASSIFIED

2/2 032 PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0121072

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT HAS BEEN FOUND THAT IN THE PROCESS OF ELABORATION OF A SIMPLE FOOD PROCURING CONDITIONED REFLEX IN RATS, THE METABOLISM OF THE NUCLEAR RNA OF THE CORTICAL NERVE CELLS INCREASES, PASSES THROUGH A MAXIMUM AND BY THE END OF LEARNING REVERTS TO THE INITIAL VALUE. WITHIN THE LIMITS OF EXPERIMENTAL ERROR, A LINEAR CORRELATION IS RECORDED BETWEEN THE INCREMENT OF THE ANIMAL'S BEHAVIOUR ENTROPY IN THE PROCESS OF LEARNING AND AN ENHANCED NUCLEAR RNA METABOLISM.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

UNCLASSIFIED PROCESSING DATE--18SEP70

1/2 028

TITLE--KINETIC CHANGES IN THE NRNA OF THE HIPPOCAMPUS, THE CEREBELLUM AND THE CEREBRAL CORTEX OF RATS IN THE PROCESS OF LEARNING -U-

AUTHOR-(04)-TIMKIN, V.N., KUZMIN, S.M., MEZEBTSEVN, A.M., DANILOVA, R.A.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 1, PP 185-190

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HIPPOCAMPUS, CEREBELLUM, CEREBRAL CORTEX, RAT, RNA, PSYCHOLOGIC CONDITIONING, LEARNING MECHANISM, CONDITIONED REFLEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1982/0734 STEP NO--UR/0247/70/020/001/0185/0190

CIRC ACCESSION NO--AP0052187

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

UNCLASSIFIED

PROCESSING DATE--18SEP70

2/2 028

CIRC ACCESSION NO--AP0052187

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE PROCESS OF SIMPLE INSTRUMENTAL CONDITIONING IN RATS THE RNA CONTENT IN THE NUCLEI OF THE CORTEX, THE HIPPOCAMPUS AND THE CEREBELLUM AT FIRST INCREASES, PASSES A MAXIMUM, AND BY THE END OF LEARNING DROPS TO NORMAL. THE MAXIMUM OF N RNA CONTENT CORRESPONDS TO THE BEGINNING OF THE CONDITIONED REFLEX STABILIZATION. AFTER THE END OF LEARNING, THE N RNA CONTENT IN THE CORTEX AND THE HIPPOCAMPUS SLOWLY GOES UP, REACHING 30 TO 50PERCENT IN 24 HOURS, AND DIMINISHES TO NORMAL IN TWO OR THREE DAYS. NO SUCH CHANGES ARE OBSERVED IN THE CEREBELLUM. IN ANIMALS WHICH RECEIVED SIMULTANEOUSLY WITH THE EXPERIMENTAL ONES, SIGNAL AND ALIMENTARY STIMULI REGARDLESS OF THE MOTOR REACTIONS, SIMILAR N RNA CHANGES OCCURRED IN THE PROCESS OF LEARNING; BUT THEIR DEPENDENCE ON TIME DISPLAYED A LESS PRONOUNCED MAXIMUM AND A SLOWER DROP BY THE END OF LEARNING. APART FROM THIS, IN THE LATTER CASE THE N RNA CONTENT DOES NOT INCREASE AFTER THE ELABORATION OF THE CONDITIONED REFLEX. THESE DIFFERENCES ARE APPARENTLY LINKED WITH THE PECULIARITIES OF THE NERVE CELL ACTIVITIES DURING LEARNING AND STIMULATION.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

UDC 612.833.51

TIMKIN, V. N., KUZ'MIN, S. M., MELENTSEV, A. N., and DANILOVA, R. A.

"Kinetic Changes in Nuclear RNA of the Hippocampus, Cerebellum, and Cerebral Cortex in Rats in the Process of Learning"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, No 1, 1970, pp 185-190

Abstract: The RNA content of the nuclei of nerve cells in the cortex, cerebellum, and hippocampus of Wistar rats increase shortly after the beginning of formation of a food conditioned reflex, reaching a peak in 20-30 min and returning to normal in about 40 min. The peak coincided with the beginning of stabilization of the reflex. After the reflex was formed, the nRNA content in the cortex and hippocampus slowly increased, returning to normal after 2 or 3 days. This did not occur in the cerebellum. Control rats (animals receiving signal and food stimulation unrelated to motor responses) also exhibited an increase in the RNA content of the neuron nuclei, but the time dependence had a less pronounced peak and a slower decrease by the end of the "learning" period. Possible causes and mechanisms of the phenomena observed are discussed.
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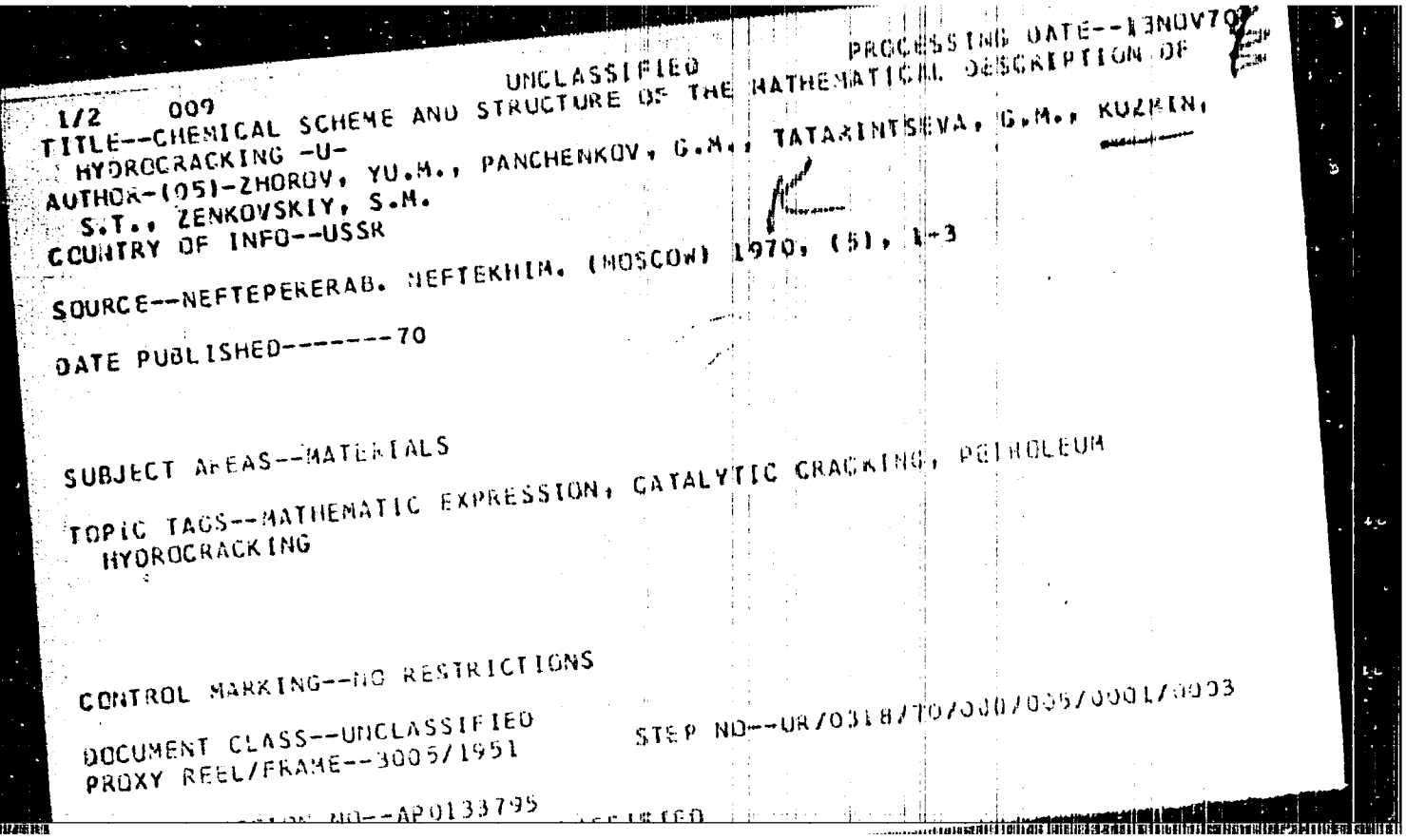

UNCLASSIFIED PROCESSING DATE--13NOV70

1/2 009

TITLE--CHEMICAL SCHEME AND STRUCTURE OF THE MATHEMATICAL DESCRIPTION OF HYDROCRACKING -U-

AUTHOR-(05)-ZHOROV, YU.M., PANCHENKOV, G.M., TATARINTSEVA, G.M., KUZMIN, S.T., ZENKOVSKIY, S.M.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (5), 1-3

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MATHEMATIC EXPRESSION, CATALYTIC CRACKING, PETROLEUM HYDROCRACKING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0318/70/000/005/0001/0003

PROXY REEL/FRAME--3005/1951

ACCESSION NO--AP0133795 UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

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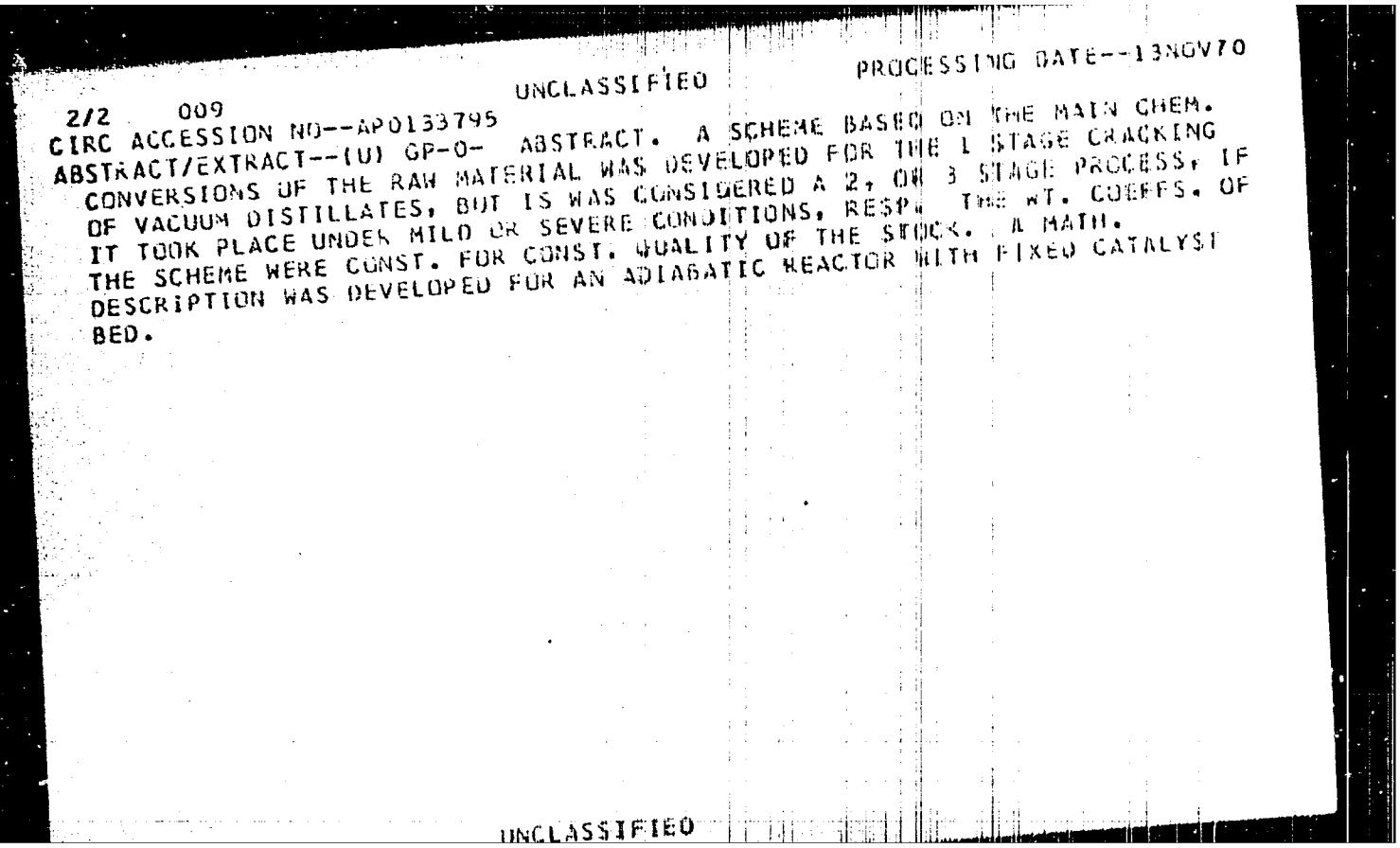

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 009

CIRC ACCESSION NO--AP0133795

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SCHEME BASED ON THE MATH CHEM. CONVERSIONS OF THE RAW MATERIAL WAS DEVELOPED FOR THE 1 STAGE CRACKING OF VACUUM DISTILLATES, BUT IS WAS CONSIDERED A 2, OR 3 STAGE PROCESS, IF IT TOOK PLACE UNDER MILD OR SEVERE CONDITIONS, RESP. THE WT. COEFFS. OF THE SCHEME WERE CONST. FOR CONST. QUALITY OF THE STOCK. A MATH. DESCRIPTION WAS DEVELOPED FOR AN ADIABATIC REACTOR WITH FIXED CATALYST BED.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

UDC 629.7.036.54(536.246+536.9)001.2

USSR

ALEMASOV, V. YE., KLABUKOV, V. YA., SAGADEYEV, V. I., LUK'YANOV, YU. G., SHIGAPOV, A. B., and KUZ'MIN, V. A.

"Indicatrix of Oxide Particle Dissipation in Products of Combustion"

Kazan', Tr. Kazan. Aviats. In-ta (Works of Kazan' Aviation Institute), No 133, 1971, pp 20-29 (from Referativnyy Zhurnal-Aviatsionnyye i Raketnyye Dvigateli, No 2, Feb 72, Abstract No 2.34.116)

Translation: When studying the thermal radiation energy in combustion products containing solid and liquid particles of condensed aluminum, magnesium and other oxides we must know the angular distribution of dissipation radiation (dissipation indicatrix) as well as the absorption and dissipation coefficients. Presently available data on dissipation indicatrix apply basically to atmospheric physics problems. The article presents the algorithm developed by the authors for calculating the dissipation indicatrix by means of M-20, M-220 and BESM-4 computers. Indicatrix calculations with BESM-4 computers for wide ranges of temperatures and particle sizes of the products of combustion are also presented. 10 illustrations, 16 references.

1/1

UDC: 681.327.66

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-

USSR

BEREZIN, A. S., VAGANOV, V. I., KUZ'MIN, V. A., MOCHALKINA, O. R., SHCHENKO, Ye. M., ORLIKOVSKIY, A. A., PERSHENKOV, V. S., Moscow "Order of the Red Banner of Labor" Engineering Physics Institute

"An Integrated Thyristor Memory Element"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 20, Jul 72, Author's Certificate No 343299, Division G, filed 7 Oct 70, published 22 Jun 72, p 174

Translation: This Author's Certificate introduces an integrated thyristor memory element which contains a thyristor with longitudinal structure, and a recording readout transistor connected by its collector to the p-base of the thyristor, and by its base through a resistor to the word recording input. As a distinguishing feature of the patent, the degree of integration is increased, and the interference immunity and recording and readout speed are increased by connecting the readout transistor emitter to the thyristor emitter, and also through a resistor to the word readout input, and by connecting the base of the readout transistor to the zero-potential line.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

UDC 621.396.6-181.5

USSR

BELOVA, G. F., GOROKHOV, V. N., KUZ'MIN, V. A., MOCHALKINA, O. R.

"Hybrid Neuristor Lines Based on PNPN Structures"

Kiev, IVUZ Radioelektronika, Vol 14, No 11, Nov 71, pp 1312-1318

Abstract: The paper presents the results of development and investigation of two kinds of neuristor lines based on planary PNPN structures: with coupling between elements over two common base regions, and over a single base. The principal electrical characteristics are measured as a function of the structure, the values of the passive elements and the mode of operation of the neuristors. It is found that the rate of propagation of a pulse in the neuristor line depends on the amplitude of the pulse and the external capacitance, and is independent of the load impedance. Pulse velocity in lines with two common bases is $2\text{-}5\cdot10^4$ m/s, while the corresponding speeds for lines with a single base are 800-1200 m/s. The rate of propagation in lines with a single common base is practically independent of the spacing between elements. When the diameter of the emitter in the N^+ region is doubled, the pulse velocity increases by a

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

BELOVA, G. F. et al., IVUZ Radioelektronika, Vol 14, No 11, Nov 71, pp 1312-1318

factor of 1.4 in lines of both types. The refractor period for lines of both types is the same -- 3 μs for a load impedance of 10 kΩ and zero capacitance. The refractor length is equal to 6 cm for a line with two common bases, and 0.2 cm for a line with a single common base. Pulse amplitude is determined by supply voltage and load impedance. The maximum possible pulse amplitude for elements separated by 110 μ is 3 V. The proposed neuristors can be comparatively easily made in integrated form as they can operate without external capacitances at load impedances of 10-20 kΩ. Six figures, bibliography of four titles.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

UDC 621.382.333.34

USSR

KUZ'MIN, V.A., PARMENOV, YU.A.

"Analysis Of The Voltampere Characteristic Of A Thyristor In An On State"

V sb. Poluprovodn. pribory i ikh primenenive (Semiconductor Devices And Their Application--Collection Of Works), Issue 24, Moscow, "Sov.radio," 1970, pp 111-125 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4B285)

Translation: Analysis and plotting of the voltampere characteristic of a thyristor in an on state for saturated and unsaturated regimes are conducted on the basis of a numerical solution of a nonlinear continuity equation with an arbitrary injection level. 7 ill. 15 ref. Summary.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

UDC 621.382.333.34

USSR

KUZ'MIN, V.A., MOSHALKINA, O.R., PERSHENKOV, V.S.

"Maximum Speed Of Response Of Low-Power Thyristors"

V sb. Poluprovodn. pribory i ikh primenenive (Semiconductor Devices and Their Application--Collection Of works), Issue 24, Moscow, "Sov. radio," 1970, pp 86-98 (from RZh--Elektronika i yeye primenenive, No 4, April 1971, Abstract No 4B284)

Translation: A computation is made of the maximum speed of response of a device with a given turn-on voltage for a one-dimensional model of a p^+-n-p-n^+ structure. It is shown that the total switching time has a minimum value at some value of the lifetime in a n-type base. The principal relations which are necessary for computation of high-speed thyristors of average power are found. 6 ill. 6 ref.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

UNCLASSIFIED PROCESSING DATE--30OCT70

1/2 037

TITLE--PULSED ILLUMINATION STUDY OF THE HYDROXYL RADICAL IN CONDENSED SYSTEMS -U-

AUTHOR-(02)-KUZMIN, V.A., CHIBISOV, A.K.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VYS. ENERG. 1970, 4(2), 171-2

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AQUEOUS SOLUTION, ABSORPTION SPECTRUM, RADIATION EFFECT, PEROXIDE, HYDROXYL RADICAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1624 STEP NO--UR/0456/70/004/002/0171/0172

CIRC ACCESSION NO--AP0112618

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 037

CIRC ACCESSION NO--AP0112618

ABSTRACT/EXTRACT--(U) GP-0- ABATRACT. PULSED PHOTOLYSIS WAS USED TO SHOW THE FORMATION OF OH RADICALS WHEN AN AQ. SOLN. OF H SUB2 O SUB2 AND TERT,BUTYL HYDROPEROXIDE (5 TIMES 10 PRIME NEGATIVE4 M) IN THE PRESENCE OF NA SUB2 CO SUB3 (10 PRIME NEGATIVE1 M) IA IRRADIATED. IN THE SPECTRUM THE ABSORPTION BAND (600 NM) OF THE SHORT LIVED ANION RADICAL CO SUB3 APPEARS. THE REACTION IS: H SUB2 O SUB2 (TERT,C SUB3 H SUB7 OOH) PLUS HV YIELDS TIMES OH PLUS TIMES OH (TERT,C SUB3 H SUB7 O TIMES); TIMES OH PLUS CO SUB3 PRIME2 NEGATIVE YIELDS OH PRIME NEGATIVE PLUS TIMES CO SUB3 PRIME NEGATIVE. IRRADN. OF A ALK. PERSULFATE SOLN. FORMS ABSORPTION SPECTRUM OF THIS RADICAL (430 NM) WAS RECORDED IN A PERSULFATE SOLN. PURIFIED FROM O SUB2 AFTER PRELIMINARY IRRADN. AT LAMBDA IS LARGER THAN 240 NM. THE FORMATION OF TIMES OH IN AN AQ. SOLN. CAN CAUSE EVOLUTION OF O. PULSED IRRADN. OF AN AIR SATD. NA SUB2 SIO SUB3 SOLN. FORMS TIMES O SUB3 PRIME NEGATIVE. FACILITY: INSV. GEOKHIM. ANAL. KHIM. IM. VERNADSKOGO, MOSCOW, USSR.

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USSR

ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

the accelerating field, as well as the radiotechnical measurement and beam observation systems, were developed by the Radiotechnical Institute of the Academy of Sciences USSR. "Tyazhpromelektroproyekt" [State Planning Institute for the Planning of Electrical Equipment for Heavy Industry] designed the general-purpose electrotechnical devices and cable connections. The plan for the construction complex of the accelerator was developed by the State All-Union Planning Institute. The construction of the accelerator was under the general supervision of the State Committee for the Use of Atomic Energy USSR. The adjustment of individual systems and the overall adjustment and start-up of the accelerator were carried out by the Institute of High-energy Physics and the developers of the accelerator systems. The basic beam work was done by the Institute of High-energy Physics with the participation of the Radiotechnical Institute. The construction of the accelerator was begun in 1960, and all the basic construction and assembly work was completed at the beginning of

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

1967. At the initial stage of construction, before the formation of the Institute of High-energy Physics in 1963, the work was coordinated by the Institute of Theoretical and Experimental Physics. The linear accelerator injector was started on 28 July 1967, the operation of the individual systems was adjusted by September 1967, and the physical start-up of the accelerator was accomplished on 14 October.

A description is given of the work done to adjust the annular electromagnet (including the electromagnet cooling and feed systems), the injection system (consisting of matching channel and injection device), the vacuum system, the radioelectronic system (including the accelerating field generation system, the acceleration process control system, and the radiotechnical measurement system), and the beam observation system (which provides for beam observation in the first revolution and during acceleration). In the physical start-up of the accelerator the main efforts were directed towards obtaining accelerated protons of the planned energy, and the problem of obtaining high

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

.USSR

ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

intensity of the accelerated proton was not raised.

The article gives a listing of the principal parameters of the proton synchrotron, as well as a schedule of the individual stages of the start-up of the accelerator. Photographs include a view of the part of the ring hall in the beam injection area and a general view of the hall of ignitron rectifiers.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

UDC: 8.74

KUZ'MIN, V. I., LEBEDEV, B. D., CHUYEV, Yu. V.

"Ways to Improve Analytical Models of Development"

V sb. Probl. kibernetiki (Problems of Cybernetics--collection of works), vyp. 24, Moscow, "Nauka", 1971, pp 5-14 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V602)

Translation: The paper investigates ways to improve models of development based on analysis of existing models of specific processes. Bibliography of 28 titles. Authors' abstract.

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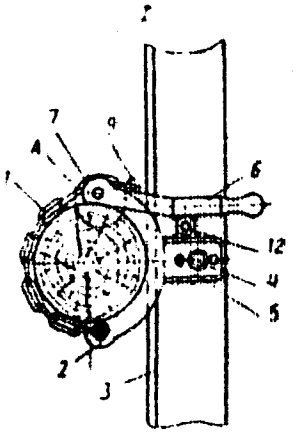
"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

AA0051814 KUZMIN V.I. UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General, Derwent, 1-70

242038 **FIXING VERTICAL PROPS** in the holds of ships during log loading, using a chain and lever arrangement on the lip of the hatch. Chain 1 is permanently attached at one end to brace 2, while the other end is free. Brace 2 is mounted on the lip of the hatch 3 by means of a shaft and nut 4. After the prop has been positioned in the brace, the chain is passed around it and a link at its free end hooked on to catch 9 of lever 6. The chain is then tightened by turning lever 6 on axle 7, so that



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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

AA0051814

AUTHORS: Kuz'min, V. I.; Balberov, Yu. A.; Pisarev, N. Ye.

Gor'kovskiy Institut Inzhenerov Vodnogo Transporta

an eye on the lever fits over a ring on the brace; retaining pin 12 can then be passed through both to fix the lever in position. 18.1.68. as 1211141/29-33, KUZ'MIN, V. I. et al. Inst. of Water Transport Engineering, Gor'kii. (4.9.69) Bul 14/18.4.69. Class 84e, Int. Cl. B 65g.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

1/2 025 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--SWELLING OF HIGH TEMPERATURE OXIDE FUEL -U-

AUTHOR-(03)-LEBEDEV, I.G., KUZMIN, V.I., PISKUN, A.S.

COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 18(4), 351-2

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--NUCLEAR FISSION, URANIUM OXIDE, PLUTONIUM, SWELL, NUCLEAR FUEL ELEMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0592 STEP NO--UR/0089/70/028/004/0351/0352

CIRC ACCESSION NO--AP0137677

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

2/2 025 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137677

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ESTN. OF THE CONTRIBUTION OF VARIOUS TYPES OF FISSION FRAGMENTS IN UO SUB2 AND PUO SUB2 WITH FUEL ELEMENT SURFACE TEMP. AT 800-1300DEGREES TO THE TOTAL VOL. CHANGE AT BURN UP TO 9.2PERCENT REVEALED THAT THE MAX. CONTRIBUTION OF SOLID FISSION FRAGMENTS WAS 0.4PERCENT OF THE VOL. PER EACH 1PERCENT OF BURNUP, THE MAIN CONTRIBUTION TO THE TOTAL VOL. CHANGE BEING THAT OF THE GASEOUS FISSION FRAGMENTS.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

UDC 547.26.119 + 543.422

USSR

GAMAYUROVA, V. S., KUZ'MIN, V. K., CHERNOKAL'SKIY, B. D., and SHAGIDULLIN, R. R., Kazan' Chemical Technological Institute Imeni S. M. Kirov

"Spirocyclic Esters of Arsonic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 9, Sep 73, pp 1937-1939

Abstract: New esters of arsonic acids and dihydric aliphatic glycols have been synthesized. The reaction consisted of refluxing a mixture of the appropriate substituted arsonic acid, ethylene glycol and benzene in a system equipped with a Dean-Stark trap. The cyclic structure of these esters has been confirmed by IR spectral data.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

USSR

UDC 532.25:536.44

KUZ'MIN, V. L. and BARANTSEV, V. G.

"Effect of an External Field on the Position of the Phase Separation Surface Close to the Critical Point"

Leningrad, Vestnik Leningradskogo Universiteta--Fizika, Khimiya, No 22, Nov 1972, pp 41-44

Abstract: This paper is a theoretical study to determine the position of the cylindrical surface for the separation of the phases formed at the critical region in the rotation of a single-component liquid as a function of the angular velocity of the rotation and the thermodynamic parameters. The results of an earlier paper published by the same authors in the same journal (No 4, 1972, p 71) were used in the present study. The results of the study can be used to find the shift of the critical meniscus in the gravitational field. Also examined in the present paper is the position of the separating surface if the liquid is a dielectric immersed in an external electric field. To attack this last problem, the authors used an expansion of the distribution functions into a functional series in terms of the external field.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

UDC 536.421.4+536.421.1

USSR

KUZ'MIN, V. N.

"Determining the Melting Point of Gallium Phosphide"

Nauchn. tr. N.-i. i proyektn. in-t redkomet. prom-sti (Scientific Transactions of the Scientific Research and Design Institute of the Rare Metals Industry--collection of works) 1971, 33, pp 118-120 (from RZh-Fizika, No. 9, 1971, Abstract No. 9E387)

Translation: Methods are considered for determining the melting point of GaP. A method for determining the melting point from the technological data is demonstrated.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

AA0040703 KUZMIN V.N. UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-30

240681 OBSERVATION OF HIGH-TEMPERATURE PROCESSES, e.g. in equipment for growing single crystals of semi-conductor compounds containing a volatile component, is improved by eliminating the effect of convective gas flows on the observations. In the case of hermetically-sealed vessels made of opaque material, with an optical quartz window in a branch pipe, a heated tube is installed in the branch pipe and sealed at the ends with sheets of optically-transparant material. Heating of materials to above 500°C in the vessel is possible without interference to observation.
2.8.67 as 1177543/22-1. L.YA.KROL' et all. STATE SCIENTIFIC RES. & DES. INST. OF THE RARE-METALS IND. (11.9.69) Bul 13/1.4.69. Class 12g. Int.Cl.-B 01j.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9

AA0040703

AUTHORS: Krol', L. Ya.; Matveyev, V. S.; Nashel'sky, A. Ya.; Kuz'min, V. N.; and Dmitriyev, G. D.

Gosudarstvennyy Nauchno - Issledovatel'skiy i Proyektnyy Institut Redkometallicheskoy Promyshlennosti

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201710009-9"

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USSR K UDC 546.681'181.1:541.66

KUZ'MIN, V. N., NASHEL'SKIY, A. YA., Giredmet (State Scientific Research and Planning Institute of Rare Metals)

"Melting Point of Gallium Phosphide"

Moscow, Neorganicheskiye Materialy, Vol 6, No 5, May 70, p 964

Abstract: The melting point of GaP with stoichiometric composition was determined to be 1503±8°C. After the alloy was prepared it was cut into sections and inspected. Nonstoichiometric composition material showed either droplets of free gallium or gaseous cracks due to an excess of phosphorus and overheating. Material of accurate stoichiometric composition was free of these defects and transmitted light.

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USSR UDC: 621.396.69.602.2

SHANNIKOV, V. M., KUZ'MIN, V. P.

"A Method of Calculating Residual Stresses in Cast Epoxy Insulation for Electrical Elements"

Tr. Leningr. in-t aviats. priborostr. (Works of the Leningrad Institute of Aviation Instrument Building), 1971, vyp. 69, pp 208-217 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V455)

Translation: A method is proposed for determining residual stresses and determining the grade of material for cast insulation from hard epoxy compound products. The results of a study of the physical and mechanical properties of EZL-120 compound product are presented. Resumé.

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